

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Ming C. Hao et al.	§	Art Unit:	2628
		§		
Serial No.:	09/982,481	§		
		§	Examiner:	Jin Cheng Wang
Filed:	October 17, 2001	§		
		§		
For:	Method For Placement Of	§	Atty. Dkt. No.:	10014772-1
	Data For Visualization Of	§		(HPC.0403US)
	Multidimensional Data Sets	§		
	Using Multiple Pixel Bar	§		
	Charts	§		

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Commissioner for Patents
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REPLY BRIEF

Sir:

The following sets forth Appellant's Reply to the Examiner's Answer dated September 3, 2008.

I. REPLY TO EXAMINER'S ANSWER REGARDING § 102 REJECTION OVER HAO '474

In the Appeal Brief, Appellant argued that Hao '474 fails to disclose the two "partitioning" elements of independent claim 44, in conjunction with the "sorting" element of claim 44. In the final rejection, the Examiner argued that Hao '474 "teaches that a set of records corresponding to the pixels in the pixel bar chart are divided into groups and the records of each group are further **sorted** according to the color of the pixels corresponding to the records of each [group] **into subgroups** of records with the same color attribute." 4/4/2008 Office Action at 4

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(emphasis added). Appellant in the Appeal Brief argued that this rejection is based on improperly equating the term “sorting” with “partitioning” as used in claim 44.

Recognizing the deficiency of the final rejection, the Examiner now raises a new interpretation of Hao '474, citing Figs. 5a-6c of Hao '474. The Examiner now argues that the data records in Figs. 5a-6c of Hao '474 “are divided into groups in accordance with a dividing attribute (a first dividing attribute) and each group is divided into subgroups of pixels in accordance with a **coloring attribute** (a second dividing attribute) wherein the pixels are aggregated into the subgroups of the pixels and each subgroup of pixels has the same color.” 9/3/2008 Examiner’s Answer at 34. However, Hao '474 teaches that each record is assigned a color corresponding to the value of a coloring attribute. Hao '474, 6:29-30. As taught by Hao '474, the color is calculated from the value of the coloring attribute. *Id.*, 6:32-33. There is nothing in Hao '474 to suggest that the coloring attribute is used for partitioning record-assigned pixels in the groups (where the groups are provided by partitioning record-assigned pixels according to a first dividing attribute along a first axis) into sub-groups along a second axis of the pixel bar chart according to a second dividing attribute. In fact, Figs. 5a-5c of Hao '474 are clear in indicating that partitioning occurs **only** in the horizontal axis. Hao '474 does not teach partitioning within the groups defined by partitioning along the horizontal axis to produce sub-groups. Moreover, Figs. 6a-6c of Hao '474 also fail to disclose or hint at the following combination of elements: partitioning the record-assigned pixels into groups along a first axis of the pixel bar chart according to a first dividing attribute; and partitioning the record-assigned pixels in **the groups** into sub-groups along a second axis of the pixel bar chart according to a second dividing attribute.

The Examiner also argued that the stack chart of Fig. 2 of Hao '474 discloses the claimed invention. Examiner's Answer at 34. Note, however, that Fig. 2 shows "prior art" with respect to Hao '474. There is no teaching whatsoever that the techniques according to Hao '474 are applied to the Fig. 2 stack chart.

There is nothing in Fig. 2 of Hao '474 that teaches the following combination of elements, in which the pixel bar chart is constructed by:

- partitioning the record-assigned pixels into groups along a first axis of the pixel bar chart according to a first dividing attribute;
- partitioning the record-assigned pixels in the groups into sub-groups along a second axis of the pixel bar chart according to a second dividing attribute;
- after partitioning into the sub-groups, sorting, in each of the sub-groups, the record-assigned pixels according to a first ordering attribute along the first axis of the pixel bar chart, and according to a second ordering attribute along the second axis of the pixel bar chart, wherein each record-assigned pixel is adjacent at least one other record-assigned pixel.

In view of the foregoing, it is clear that Hao '474 does not anticipate the subject matter of claim 44, contrary to the assertion of the Examiner.

Therefore, in view of the foregoing and the arguments presented in the Appeal Brief, reversal of the final rejection of claims over Hao '474 is respectfully requested.

II. REPLY TO EXAMINER'S ANSWER REGARDING THE § 102 REJECTION OVER KEIM

In the Examiner's Answer, the Examiner conceded that a "proper" Rule 132 Declaration may be employed to overcome a prior art reference in the present application. Examiner's Answer at 35. However, the Examiner alleged that certain statement in Applicant's Rule 132 Declaration is defective. *Id.* at 35-36.

Paragraph 3 of the Declaration Under 37 C.F.R. § 1.312 filed on March 20, 2007, is set forth below:

Through oversight on the part of the remaining inventors (Daniel A. Keim, Ming C. Hao, Julian Ladisch, Meichun Hsu, and Umeshwar Dayal), Adrian Krug was not listed as an author of the Keim HP Technical Report. In fact, Adrian Krug did substantively contribute to the subject matter of the Keim HP Technical Report. Adrian Krug should have been named as an author, and the failure to do so was an error on the part of the other co-inventors. Thus, although inventor Adrian Krug is not listed as an author of the Keim HP Technical Report, we state that the entire content of the Keim HP Technical Report originated with or was obtained from the Applicant (including inventors Ming C. Hao, Umeshwar Dayal, Meichun Hsu, Daniel A. Keim, Adrian Krug, and Julian Ladisch) of the present application.

The Examiner argued that this statement in the Declaration is incorrect because “the factual evidence before us is that the subject matter of the cited Keim reference is originated [sic] from the Applicant *not* including Andrian [sic] Krug.” *Id.* at 36. However, the statement in ¶ 3 of the Declaration explained that the omission of Adrian Krug was due to oversight. The Examiner has cited to no evidence whatsoever that indicates this statement is incorrect. The only apparent basis for the Examiner refusing to accept this statement is the Examiner’s subjective belief that this statement is erroneous. However, it is noted that the Rule 132 Declaration is the only competent (uncontradicted) evidence of record. As noted by the M.P.E.P., “an uncontradicted ‘unequivocal statement’ from the applicant regarding the subject matter disclosed in an article, patent, or published application will be accepted as establishing inventorship.” M.P.E.P. § 716.10.

Refusing to accept an uncontradicted unequivocal statement from the Applicant constitutes clear error.

Paragraph 4 of the Declaration is set forth below:

We also state that the authors of the Keim HP Technical Report derived their knowledge of the subject matter described in the Keim HP Technical Report from

the Applicant (including inventors Ming C. Hao, Umeshwar Dayal, Meichun Hsu, Daniel A. Keim, Adrian Krug, and Julian Ladisch) of the present application.

The Examiner stated that “the factual evidence before us is that the subject matter of the cited Keim reference derived their knowledge of the subject matter described in the Keim reference from the Applicant *not* including Andrian [sic] Krug.” *Id.* The Examiner cites to no evidence that would contradict the statement in ¶ 4. In ¶ 3, Applicants have already stated that the omission of Adrian Krug as an author in the Keim reference is due to oversight. Therefore, the statement in ¶ 4 of the Declaration is entirely consistent with the statement in ¶ 3.

The Examiner’s objection to ¶ 5 of the Declaration is also based on an improper refusal to consider an uncontradicted, unequivocal statement of the Declaration.

In view of the foregoing, the refusal to accept the Rule 132 Declaration to overcome the Keim HP Technical Report constitutes clear legal error.

The remaining portions of the Examiner’s Answer on pages 37-44 have been addressed by the Appeal Brief. In view of the foregoing and in view of arguments presented in the Appeal Brief, reversal of the § 102 rejection over the Keim HP Technical Report is respectfully requested.

III. REPLY TO EXAMINER’S ANSWER REGARDING THE § 102 REJECTION OVER ANKERST

An element of claim 44 is that after partitioning into the sub-groups, sorting is performed in each of the sub-groups, with the record-assigned pixels sorted according to a first ordering attribute along the first axis of the pixel bar chart, and according to a second ordering attribute along the second axis of the pixel bar chart.

As disclosing the above feature, the Examiner cited Fig. 7 along with Figs. 1b, 2, 3b, 4a, 4b, 4c, 9, and 10 of Ankerst. The Examiner stated that Figs. 3-5 and 7 of Ankerst “discloses the

second ordering attribute on the x-axis, e.g., the second ordering attribute ordered according to the attribute values following into Class A, Class B, or Class C by splitting the pixels into the set of class partitions in accordance with the splitting attribute wherein the second ordering attribute is the class partition attribute or the splitting attribute characterized by the categorical attribute numbers following into the class partitions.” 4/4/2008 Office Action at 19. Note that the ordering of pixels along each row in Fig. 3 is according to the corresponding attribute of that row. For example, the ordering of pixels in the last row of Fig. 3 of Ankerst is according to attribute 120. Similarly, the ordering of pixels in the row corresponding to attribute 90 would be according to attribute 90. The Examiner has apparently identified parts of multiple rows depicted in Figs. 3 and 5 as being a sub-group; however, since the multiple rows are ordered according to different attributes along the x-axis, it would be impossible for Ankerst to order pixels in each of the sub-groups (which was asserted by the Examiner as including parts of multiple rows) according to a second ordering attribute along the second axis of the pixel bar chart.

The Examiner argued that Figs. 2-5 and 7 of Ankerst disclose “the pixels are sorted on a line-by-line basis within each class partition of Fig. 4 wherein at least a first ordering attribute and a second ordering attribute have been utilized in the ordering/sorting/arranging/positioning of the pixels in a *two-dimensional* screen space.” Examiner’s Answer at 50. The Examiner further stated that “[s]orting the pixels in a line-by-line fashion utilizing the sorted attribute values requires a two-dimensional arrangement of the pixels in the two-dimensional screen space.” *Id.* According to the Examiner, “Ankerst teaches a two-dimensional sorting which requires a first sorting attribute and a second sorting attribute.”

However, that does not change the fact that the different rows in Fig. 3 of Ankerst correspond to different attributes, such that sorting in each of the rows is according to a different attribute. Since the multiple rows in Ankerst are ordered according to different attributes along the x-axis, it would be impossible for Ankerst to order pixels in each of the sub-groups (which was asserted by the Examiner as including parts of multiple rows) according to a second ordering attribute (note singular sense) along the second axis of the pixel bar chart.

It is also noted that claim 44 specifically recites that in each sub-group, pixels are sorted according to a first ordering attribute along the first axis and according to a second ordering attribute along the second axis. Thus, any single row depicted in Fig. 4 or 5 of Ankerst cannot constitute the sub-group of claim 44, since such a single row does not have pixels ordered according to two different attributes along two different axes. Therefore, under the Examiner's application of the claim language onto Ankerst, multiple rows must be considered a sub-group. However, if multiple rows are considered to make up a sub-group, then there cannot be ordering of pixels according to a second ordering attribute along the second axis. Instead, there are multiple orderings according to multiple attributes if multiple rows are considered to make up a single sub-group.

In fact, as taught by Ankerst, each attribute of the training data is visualized in a separate area of the screen (*see* Section 3.1 on page 3 of Ankerst), and each attribute is sorted separately and independently as depicted in Fig. 2 of Ankerst. As stated by Ankerst, "[e]ach attribute is visualized independently from the other attributes in a separate bar. Figure 2 illustrates the method of the bar visualization for the case of two attributes." Ankerst, page 3, left column, last paragraph. As further stated by Ankerst, "[e]ach attribute is sorted separately and the induced order is used for the arrangement of the pixels." *Id.*, right column, second paragraph.

In view of the foregoing and in view of the arguments presented in the Appeal Brief, reversal of the § 102 rejection over Ankerst is respectfully requested.

IV. REPLY TO EXAMINER'S ANSWER REGARDING THE § 102 REJECTION OVER THE HAO HP TECHNICAL REPORT

With respect to independent claim 44, Appellant pointed out that the Hao HP Technical Report does not disclose partitioning pixels into groups along a first axis of the pixel bar chart according to a first dividing attribute, and partitioning the pixels in the groups into sub-groups along a second axis of the pixel bar chart according to a second dividing attribute. The Examiner pointed to the “overall teaching” in Section 3 of the Hao HP Technical Report, and particularly, to the X ordering attribute and the Y ordering attribute mentioned in this section. However, the X **ordering** attribute and the Y **ordering** attribute are not the same as the dividing attributes recited in claim 44. In fact, claim 44 specifically recites first and second **dividing** attributes, in conjunction with first and second **ordering** attributes, which expressly indicates dividing and ordering attributes are different. Section 3 of the Hao HP Technical Report shows only one dividing attribute.

With respect to Fig. 5 of the Hao HP Technical Report, the Examiner argued that “partitioning is performed in accordance with the coloring attribute of the pixels corresponding to the quantity attribute of the data records.” However, assigning colors to data records is **not** the same as partitioning pixels into groups (or sub-groups) according to a dividing attribute.

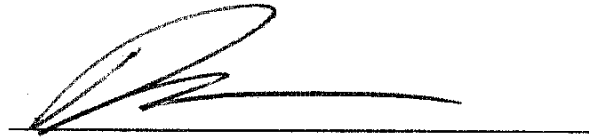
In view of the foregoing, the § 102 rejection over the Hao HP Technical Report is clearly erroneous. Therefore, in view of the foregoing, and in view of the arguments presented in the Appeal Brief, reversal of the § 102 rejection over the Hao HP Technical Report is respectfully requested.

V. CONCLUSION

In view of the foregoing, and in view of the arguments presented in the Appeal Brief, reversal of all final rejections is respectfully requested.

Respectfully submitted,

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